COMP 4900C Computational Logic and Automated Reasoning
Winter 2015 Assignment 4

Instructions:

1. Assignments are individual, no groups. Include at the top: full name, student number and email address.

2. They have to be created with Latex, and submitted in pdf format. Use the same format as this document (the Latex source is provided with the pdf). Submit by email to the instructor, with "Assignment "Number", CompLog" in the subject. **Include your last name in the file name!**

3. **Latex has to be used as such, not as you would use a text editor, such as Notepad. In particular, formulas have to be written using Latex's mathematical features, and then compiled.**

4. Explain your solution very carefully, but still be succinct with your answers. No unnecessary verbose arguments, please. Go to the point.

5. Whenever examples are requested, they must be essentially different from those given in class for the same purpose. However, you may reuse examples given in class if you are using them for illustrating something different from what was addressed in class.

6. Make explicit all your assumptions.

7. Unless the problem refers to something in the course slides, each problem **must include** the original statement of the problem included in posted assignment.

8. **At least 20% of the mark is associated to following the instructions above.**

1. Consider the following puzzle:

"There are four people: Megan, Loretta, Paul and Maurice. Each of them has two jobs, but they do not have jobs in common. The jobs they can perform are: chef, guard, nurse, tennis player, lawyer, teacher, acting, and boxing. Nurse and acting are for men. The spouse of the chef is a tennis player. Megan does not do boxing. Paul did not go to college. Megan, the chef, and the lawyer meet every week to play tennis".

Write a program in **propositional Prolog** that can help you, in an **interactive** manner, find the jobs each person performs (you should find a single solution). The program must represent the information above; from which the jobs should be inferred. For this, the user may **dynamically** insert of eliminate information about possible jobs (e.g. insert that "Megan is

a lawyer" or delete that "Loretta is a tennis player"), and ask about possible choices and paths to continue solving the puzzle.

Hand-in: A pdf file containing, and clearly separating: (a) the program, (b) a short report explaining the program, (c) a short user manual for your program, (d) an example of a run (trace) showing how you interactively solved the puzzle with your program.

Deadline: March 16, at 23:59